

Rugged  $\pm 10$  g to  $\pm 70$  g  
Superior Zero g Bias Stability

## Analog Accelerometers

The Measurement-Specialties 13200C (uniaxial) and 23200C (biaxial) analog accelerometers are capable of accurately measuring  $\pm 10$ g,  $\pm 15$ g,  $\pm 20$ g,  $\pm 25$ g,  $\pm 30$ g,  $\pm 35$ g,  $\pm 40$ g,  $\pm 50$ g, or  $\pm 70$ g accelerations on one or two axes. A tough, compact housing holds potted electronics and the small size and built-in power regulation allow the 13200C and 23200C to fit where other accelerometers can't. Choose the bandwidth and range options best suited for your application.

The voltage output of the 13200C and 23200C is directly proportional to the acceleration along the axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. Users are supplied with a calibration certificate listing sensitivity and offset for each sensor, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. Increased offset compensation can be obtained with Option C002

Tested over the  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range, the accelerometers have a nominal full scale output swing of  $\pm 2$  Volts. The zero g output level is nominally  $+2.5$  Volts. Precise values are available on the included calibration certificate. Custom versions of the 13200C and 23200C can be provided.

## FEATURES

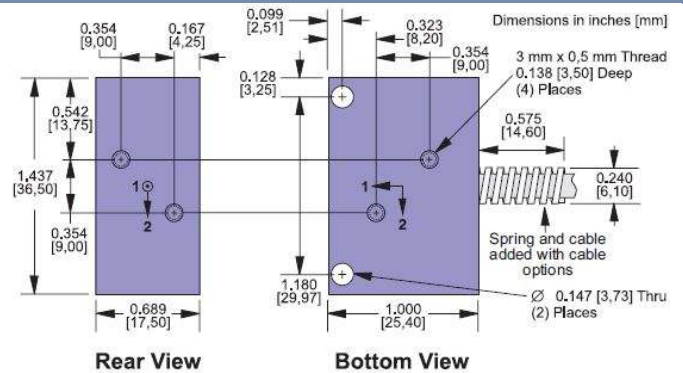
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- Small Size
- Built-in Power Supply Regulation
- Easy Installation
- Three Year Warranty

## APPLICATIONS

- Vehicle dynamics
- Construction Equipment
- Research & Development
- Test & Measurement
- Military/Aerospace

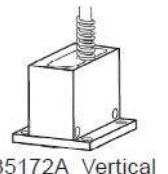


## dimensions



Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting.

Mounting adapters (sold separately)



## connections



Pin	1	2	3	4	5	6	7	8	9
Signal	A2+	Signal-	T+	+5VOut	A1+	Signal-	Self Test	+V <sub>S</sub>	Gnd
Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

# 13200C/23200C Accelerometer



## performance specifications

$T_A = T_{min}$  to  $T_{max}$  :  $8.5 \leq V_S \leq 36$  V: Acceleration = 0 g unless otherwise noted; within one year of calibration. Improved specifications available upon request.

PARAMETERS	Min	Typical	Max	Units	Conditions/Notes
<b>Range:</b> Measurement Full Scale	$\pm 10$		$\pm 70$	g	On each axis. Must specify via Option Rnnn
<b>Sensitivity</b>					
At 25°C, Option R050		38*		mV/g	Precise values on cal certificate
Drift $T_{min}$ to $T_{max}$		$\pm 0.5$		%	Percent of sensitivity at 25°C
<b>Zero g Bias Level</b>					
At 25 °C		2.5		V	Precise values on cal certificate
Drift to $T_{min}$ or $T_{max}$ , Option C001		1		g	At 1.25°C/min. temperature rate of change
Drift to $T_{min}$ or $T_{max}$ , Option C002		60		mg	At 1.25°C/min. temperature rate of change
<b>Alignment</b>					
Deviation from Ideal Axes		$\pm 1.0$	$\pm 3.0$	degrees	Precise values on cal certificate. Can be compensated if required
<b>Transverse Sensitivity</b>		$\pm 0.25$		%	Inherent sensor error, excluding misalignment
<b>Nonlinearity</b>		0.2	2	% FSR	Best fit straight line
<b>Frequency Response</b>	0		400	Hz	Upper cutoff per option Bnnn, -3 dB pt $\pm 10\%$
<b>Noise Density</b>					
Option R070		1.8	3.5	mg/ $\sqrt{\text{Hz}}$	10 Hz to 400 Hz
Option R050, R040		1.4	3.0	mg/ $\sqrt{\text{Hz}}$	
Option R035, R030, R025, R020, R015, R010		1.1	3.0	mg/ $\sqrt{\text{Hz}}$	
<b>Self-Test Input Impedance</b>	10			k $\Omega$	Pullup. Logic "1" $\geq 3.5$ V, Logic "0" $\leq 1.5$ V
<b>Temperature Sensor</b>					
Sensitivity		6.45		mV/ $^{\circ}\text{C}$	
0°C Bias Level		509		mV	
<b>Outputs</b>					
Output Voltage Swing	0.05		4.95	V	$I_{out} = \pm 0.5$ mA
Capacitive Drive Capability		1000		pF	
<b>Power Supply (Vs)</b>					
Input Voltage Limits	-80		+80	V	-80 V continuous, >38 V if $\leq 550$ ms, duty <1%
Input Voltage Operating	+8.5		+36	V	Continuous
Input Current		12		mA	
Rejection Ratio		>120		dB	DC
<b>Temperature Range (TA)</b>	-40		+85	$^{\circ}\text{C}$	
<b>Mass</b>		35		grams	Precise values on cal certificate
<b>Shock Survival</b>	-4000		+4000	grams	Any axis for 0.5 ms, powered or unpowered

\*Scale linearly with range option Rnnn; see Ordering Information

## ordering info

